UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,231	10/24/2005	Andreas Bjorklund	3782-0313PUS1	7940

2292   7590   12/05/2008
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EXAMINER
CHAWAN, SHEELA C

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
12/05/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 October 2005</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-35</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>33</u> is/are allowed.

6)☒ Claim(s) <u>1-8,11-24,27-32,34 and 35</u> is/are rejected.

7)☒ Claim(s) <u>9,10,25 and 26</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 October 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>11/21/05; 10/24/05.</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Preliminary Amendment

2.   Preliminary amendment filed on 10/24/05 has been entered.

Claims 1-35 are pending in the application.

Information Disclosure Statement

3.   The information disclosure statement (IDS) submitted on 11/21/05, 10/24/05, the

information disclosure statement has been considered by the examiner.

Drawings

4.   The Examiner has approved drawings filed on 10/24/05.

Claim Rejections - 35 USC § 101

5.   Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter,

or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements

of this title.

Claims 1- 26, 30 and 31, 27- 29, 34-35 are rejected under 35 U.S.C. 101 as not

falling within one of the four statutory categories of invention. While the claims recite a

series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must

(1) be tied to another statutory category (such as a particular apparatus), or (2)

transform underlying subject matter (such as an article or material) to a different state or

thing (See the May 15, 2008 memorandum issued by Deputy Commissioner for Patent

Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101"-

publicly available on the PTO website

httpllwww.uspto.govlwebllofficeslpacldapplopallpreognoticel, section_101 05 15

2008.pdf, "memorandum to examining corp"). The instant claims neither transform

underlying subject matter nor positively tie to another statutory category that

accomplishes the claimed method steps, and therefore do not qualify as a statutory

process. In order for a process to be "tied" to another statutory category, the structure of

another statutory category should be positively recited in a step or steps significant to

the basic inventive concept, and NOT just in association with statements of intended

use or purpose, insignificant pre or post solution activity, or implicitly.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

Claims 30 and 34 is rejected under 35 U.S.C. 101 because the claimed invention

is directed to non-statutory subject matter as follows. Claim 30, defines a computer

program which comprises program code, which). However, the claim does not define a

computer-readable medium or memory and is thus non-statutory for that reason (i.e.,

"When functional descriptive material is recorded on some computer-readable medium

it becomes structurally and functionally interrelated to the medium and will be statutory

in most cases since use of technology permits the function of the descriptive material to

be realized" – Guidelines Annex IV). That is, the scope of the presently claimed can

range from paper on which the program is written, to a program simply contemplated

and memorized by a person. The examiner suggests amending the claim to embody

the program on "computer-readable medium" or equivalent in order to make the claim

statutory. Any amendment to the claim should be commensurate with its

corresponding disclosure.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

   A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under

section 122(b), by another filed in the United States before the invention by the

applicant for patent or (2) a patent granted on an application for patent by another filed

in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the

effects for purposes of this subsection of an application filed in the United States only if

the international application designated the United States and was published under

Article 21(2) of such treaty in the English language.

        Claims 1-8, 11-24, 27-32 are rejected under 35 U.S.C. 102(e) as being

anticipated by Pettersson et al., (US. 6,667,695 B2).

        The applied reference has a common (assignee) with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the

invention "by another," or by an appropriate showing under 37 CFR 1.131. The changes

made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do

not apply to the examination of this application as the application being examined was

not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C.

122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the

amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

As to claim 1, Pettersson discloses a method for position decoding, in which a

sequence of positions is extracted from a sequence of images of a position-coding

pattern, as recorded by a sensor (column 15, line 15, column 16, and lines 1-34), said

method comprising characterized by the steps of:

retrieving at least one reference position (column 15, lines 41-44); and

extracting said sequence of positions solely by matching information obtained

from each of said images with a corresponding pattern reference area, which represents

a known subset of the position-coding pattern with a given spatial relation to said

reference position (column 15, lines 49-67 and column 16, lines 1-34).

As to claim 2, Pettersson discloses a method as in claim 1, wherein each position

in said sequence of positions is extracted by: determining a relative location, within said

pattern reference area, of a match between said information and said pattern reference

area; and adjusting said spatial relation by said relative location to thereby derive said

position (column 15, lines 41-45, for each raster point identification (matching) of each

point is made).

As to claim 3, Pettersson discloses a method as in claim 1, further comprising the

step of generating said pattern reference area for each image (column 15, lines 34- 40,

generating a pattern reference area input signal is made of an image of a detected

subject of position code).

As to claim 4, Pettersson discloses a method as in claim 1, wherein said spatial

relation is given by a predicted position, the method comprising the step of estimating

said predicted position based on said at least one reference position (column 9, lines

46- 55).

As to claim 5, Pettersson discloses a method as in claim 4, wherein said pattern

reference area is generated with a given positional relationship to said predicted

position (fig 5, column 9, and lines 55-67).

As to claim 6, Pettersson discloses a method as in claim 5, wherein said

predicted position is included in the known subset of the position-coding pattern (fig 5,

column 9, lines 55-67).

 As to claim 7, Pettersson discloses a method as in claims 4, wherein said step

of estimating is effected for each image, to generate a sequence of predicted positions

(column 11, lines 47- 56, predicted position coordinates of position coder).

As to claim 8, Pettersson discloses a method as in claim 7, wherein said

sequence of predicted positions are converted, by said step of extracting by matching,

to said sequence of positions (column 12, lines 41-44).

As to claim 11, Pettersson discloses a method as in claim I, in which each reference position is retrieved by calculating a position based on an image of said position-coding pattern in another way than said step of extracting by matching (column 9, lines 9-24, the position code is read when the image rotated 190 degrees in another way than the reference position).

As to claim 12, Pettersson discloses a method as in claim 11, wherein said step of calculating a position includes: extracting symbol data from an isolated image preceding said sequence of images; deriving position data by effecting one or more lookup operations, using said symbol data, in one or more data structures that contain fundamental coding data of the position-coding pattern; and/or inputting said symbol or position data to a mathematical formula for explicit calculation of an absolute position (column 9, lines 9- 34).

As to claim 13, Pettersson discloses a method as in claim 1, further comprising the step of merging said at least one reference position with said sequence of positions (column 9, lines 55- 67).

As to claim 14, Pettersson discloses a method as in claim I, wherein said step of retrieving is effected intermittently to update or replace said at least one reference position, the thus-retrieved reference position being used in a subsequent step of extracting by matching for a subsequent sequence of images (column 10, lines 32- 47).

As to claim 15, Pettersson discloses a method as in claim I, wherein, for an individual image among said sequence of images, the corresponding pattern reference area includes a plurality of partial areas defining a plurality of respective candidates to a

position represented by the position-coding pattern in said individual image (column 10, lines 32- 47).

As to claim 16, Pettersson a method as in claim 15, wherein said step of extracting by matching includes comparing the information obtained from said individual image with each of said plurality of partial areas included in the corresponding pattern reference area (column 15, lines 41-45, for each raster point identification (matching) of each point is made).

As to claim 17, Pettersson discloses a method as in claim 16, wherein said step of extracting by matching includes selecting, for an individual image among said sequence of images, the one of said plurality of respective candidates for which the comparing step indicates correspondence between the information obtained from said individual image and any of said plurality of partial areas (column 15, lines 41-45, for each raster point identification (matching) of each point is made).

As to claim 18, Pettersson discloses a method as in claim 1, wherein the position- coding pattern comprises a plurality of marks and wherein each mark codes one of at least two different values in at least one dimension (column 6, lines 44- 49, plurality is explained as primary and secondary difference sequence number).

As to claim 19, discloses Pettersson a method as in claim 18, in which said step of extracting by matching includes obtaining said information from an individual image among said sequence of images by generating a probability matrix, said probability matrix representing a subarea of the position- coding pattern which is included in said individual image and containing one matrix element for each mark in said subarea,

wherein each matrix element is adapted to store either a value which represents a most

probable estimated value of its mark, or a value which represents that no value has

been estimated for its mark (column 6, lines 32-53).

As to claim 20, Pettersson discloses a method as in claim 19, wherein said value

which represents a most probable estimated value is an integer value (column 6, lines

32-53).

As to claim 21, Pettersson discloses a method as in claim 19, wherein each

mark codes a binary value in a first dimension and a binary value in a second

dimension, and wherein a first probability matrix is generated for the values of the marks

in said first dimension and a second probability matrix is generated for the values of the

marks in said second dimension(column 15, lines 58-60).

As to claim 22, Pettersson discloses a method as in claims 19, and claims 16,

wherein said step of extracting by matching includes comparing the or each probability

matrix with each of said plurality of partial areas included in the corresponding pattern

reference area (column 16, lines 18-30).

As to claim 23, Pettersson discloses a method as in claims 19, each dimension

of the position-coding pattern being based on shins of a cyclic main number sequence,

wherein any subsequence, of a first predetermined length or longer, of said cyclic main

number sequence has an unambiguously determined position in said cyclic main

number sequence, and based on a sequence of difference numbers representing

differences in shifts between pairs of said main number sequence in the position-coding

pattern, wherein any subsequence, of a second predetermined length or longer, of said

sequence of difference numbers has an unambiguously determined position in said

sequence of difference numbers, said step of extracting by matching including (column

5, lines 31- 48, line 50- 67), obtaining a first set of difference numbers for said pattern

reference area; obtaining a second set of difference numbers from the or each

probability matrix; matching said second set of difference numbers with said first set of

difference numbers(column 5, lines 31- 48, line 50- 67); and extracting a position of

said position-coding pattern, in said dimension, from a match from said matching step (

column 5, lines 31- 48, line 50- 67);

As to claim 24, Pettersson discloses a method as in claim 23, wherein said step

of obtaining a second set of difference numbers includes:

matching respective rows or columns of the or each probability matrix with said main

number sequence so as to estimate main number sequence positions for said rows or

columns; and deriving the difference numbers of said second set by subtracting

estimated main number sequence positions for pairs of rows or columns of the or each

probability matrix (column 7, lines 21-35).

As to claim 27, Pettersson disclose a method for position decoding by

determining a position on the basis of information obtained from a partial area, recorded

by a sensor, of a position-coding pattern, the position-coding pattern comprising a

plurality of marks, each mark coding one of at least two different values in at least one

dimension, said method comprising characteize d by the step of: generating a

probability matrix, said probability matrix containing one matrix element for each mark in

said partial area, each matrix element being adapted to store either a value which

represents a most probable estimated value of its mark, or a value which represents

that no value has been estimated for its mark; matching said probability matrix with

information about how the position-coding pattern is composed in a pattern reference

area of said position-coding pattern, said pattern reference area being larger than said

partial area and including said partial area; and selecting, as the position to be

determined, the one of the positions defined by said pattern reference area for which

the matching step indicates correspondence between said probability matrix and said

pattern reference area (column 8, lines 3-12, 41-49, column 9, lines 2-15).

As to claim 28, Pettersson discloses a method as in claim 27, wherein said value

of a matrix element of said probability matrix which represents a most probable

estimated value is an integer value (column 8, lines 42-49).

As to claim 29, Pettersson discloses a method as in claim 27, wherein each mark

codes a binary value in a first dimension and a binary value in a second dimension, and

said probability matrix is formed by a first probability matrix for the values of the marks

in said first dimension and a second probability matrix for the values of the marks in said

second dimension (column 5, lines 13-15, column 8, lines 32-34).

As to claim 30, Pettersson discloses a computer program which comprises

program code which, when executed in a computer, causes the computer to carry out a

method according to claims 1 (column 18, lines 23-25).

As to claim 31, Pettersson discloses a computer-readable storage medium on

which is stored a computer program which, when executed in a computer, causes the

computer to carry out a method according to claims 1 (column 18, lines 28- 36).

Regarding claim 32, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 1.

As to claim 34, Pettersson discloses A computer program which comprises program code which, when executed in a computer, causes the computer to carry out a method according to claim 27(column 18, lines 28- 36).

As to claim 35, Pettersson discloses A computer-readable storage medium on which is stored a computer program which, when executed in a computer, causes the computer to carry out a method according to claim 27 (column 18, lines 59- 64).

Allowable Subject Matter

8.   Claims 9, 10, 25, 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 33 is allowed.

Contact Information

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sheela C Chawan whose telephone number is. 571-

272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-

8300. Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sheela C Chawan/

11/21/08

Primary Examiner, Art Unit 2624